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High Quality Logs: Saw or Sell?

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ABSTRACT. The break-even point for sawing or selling veneer class logs is determined to be higher than generally assumed by foresters and mill owners. The efficiencies of the mill operator and the sale of chips can raise the net return from sawing logs above that ordinarily accepted in selling the same logs for veneering.

Probably all mill owners or operators and timber appraisers at one time or another have an opportunity to sell saw logs for some other higher-value product. Because more money is usually offered for the logs than was originally paid for them, the mill owner stands to gain by such transactions. In some cases, however, the owner should closely examine whether the extra money offered is really a good deal.

For example, consider transactions between the lumberman and the veneer industry. The veneer industry often purchases logs on the mill yard, from logging jobs or from someone who has already bought the logs for saw timber. This is a good practice—an efficient way to do business and to utilize each log for its highest use. But some careful scrutiny of the values involved is necessary.

Put yourself in the position of a typical mill owner. He can purchase yellow-poplar saw logs for $130/Mbf (Doyle scale) delivered to his mill yard. A business associate, the veneer buyer, occasionally checks on material that he can use, offering $190/Mbf (Doyle) for suitable logs right there on the yard. Now the question the mill owner must answer: "Is this a good deal or not?" Let's examine the behind-the-scene factors that should be considered.

Table 1 gives an example of yellow-poplar logs with projected lumber grade outturn. These figures are available in a Forest Service guidebook (USDA Forest Service 1966) which lists the percentages of lumber grade outturn for various diameters by log grade for 15 different species groups. Table 1 is based on averages of all diam-

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Table 1. Green Lumber scale and value outturn for yellow-poplar by Forest Service log grades (Doyle rule)

Lumber grade and price/M	Log grade 1, Scale 12,027			Log grade 2, Scale 5,011			Log grade 3, Scale 1,925		
	Scale	Percent	Value/M	Scale	Percent	Value/M	Scale	Percent	Value/M
FAS $325	2,936	17.7	$ 57.53	130	1.7	$ 5.53	17	.5	$ 1.63
Sel. & saps $315	2,504	15.1	47.57	291	3.8	11.97	20	.6	1.89
#1C $225	7,513	45.3	101.93	3,388	44.3	99.68	726	22.0	49.50
#2A $143	1,957	11.8	16.87	2,126	27.8	39.75	1,007	30.5	43.62
#2B $120	730	4.4	5.28	971	12.7	15.24	769	23.3	27.96
#3A & 3B $100	945	5.7	5.70	742	9.7	9.70	763	23.10	23.10
TOTAL									
Green	16,585	—	$234.88	7,648	—	$181.87	3,302	—	$147.70
Dry	15,756	—	$227.83	7,266	—	$169.14	3,137	—	$143.27

[1] *Value = Percent times present price per M.*
[2] *Dry lumber scale = Green minus 5 percent.*
[3] *Dry value = Green value minus 7 percent for #1 and #2 logs; 3 percent for #3 and lower logs.*

eters and is easily constructed. For the most realistic results, the mill should use its own overrun figures to predict dry lumber values. Of course, it would be even more accurate if a particular mill had its own percent lumber yield by log grade. However, the Forest Service's figures are generally applicable throughout the country.

As seen in Table 1, Number 1 logs were found to be valued at $227.83/Mbf; veneer logs are usually chosen from this grade. The number 2 logs are valued at $169.14 and the Number 3 logs, $143.27. Tables 2A and 2B are derived from Table 1. In Table 2A, the values are computed as if the logs were cut and tallied into lumber. Table 2B concerns the same logs, but provides for the sale of about 6,900 feet of veneer logs from the Number 1 logs. As seen in Table 2A, the owner obtained the highest margin, $1,308.95, from the lumber, as opposed to veneer and lumber shown in Table 2B which brought $1,075.88. It is a safe assumption that the owner would not sell these logs at $190/Mbf. They would be worth more if processed.

There will be frequent opportunities to deal with veneer buyers, so the owner needs to know how to evaluate reasonable offers for veneer logs. This evaluation will not be difficult to make if you first construct tables like those used in this article, and then calculate the break-even point to select the best option. The break-even point in this case is expressed in the following equation:

$$\frac{\text{Total margin by sawing} - \text{Total margin by sawing and veneer log sales}}{\text{Veneer volume (Mbf, Doyle)}} + \text{Veneer log price} = \text{Break-even price/Mbf, Doyle}$$

$$\frac{1308.95 - 1075.88}{6.922} + 190 = \text{Break-even price/Mbf, Doyle}$$

$$\frac{233.07}{6.922} + 190 = \text{Break-even price/Mbf, Doyle}$$

$$33.67 + 190 = \$223.67/\text{Mbf Break-even price, Doyle}$$

The example above shows that the owner stands

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Table 2. Logs used for lumber alone and logs used for both lumber and veneer.

	Forest Service log grade	Doyle log scale Mbf	Lumber tally Mbf	Lumber tally value	Veneer[1] log value	Chip[2] value	Total value	Mfg[3] cost/ M. lbr. tally	Log[4] cost/ M. log scale	Margin	Margin/ M.L.S.	Margin/ M.L.T.
	Used for lumber	MBF										
	1	12.027	15.756	$3,589.69	—	$283.29	$3,872.98	$1,183.12	$1,563.51	$1,126.35	$93.65	$71.49
A.	2	5.011	7.266	1,228.97	—	130.64	1,359.61	545.60	651.43	162.58	32.44	22.38
	3	1.925	3.137	449.43	—	56.40	505.83	235.56	250.25	20.02	10.40	6.38
	TOTAL	18.963	26.159	$5,268.09		$470.33	$5,738.42	$1,964.28	$2,465.19	$1,308.95		
	Used for lumber and veneer											
	1	5.105	6.687	$1,523.50	—	$120.23	$1,643.73	$ 502.12	$ 663.65	$ 477.96	$93.63	$71.48
B.	2	5.011	7.266	1,228.97	—	130.64	1,359.61	545.60	651.43	162.58	32.44	22.38
	3	1.925	3.137	449.43	—	56.40	505.83	235.56	250.25	20.02	10.40	6.38
	Veneer	6.922	—	—	$1,315.18		1,315.18	—	899.86	415.32	59.95	
	TOTAL	18.963	17.090	$3,201.90	$1,315.18	$307.27	$4,824.35	$1,283.28	$2,465.19	$1,075.88		

[1] Timber Mart South, *December 1977; $190/Mbf (Doyle), delivered logs.*
[2] *Chips @ $17.98/M lumber tally.*
[3] *South wide average of $75.09/M.L.T.*
[4] Timber Mart South, *December 1977; $130/Mbf (Doyle), delivered logs.*

to gain by selling to veneer buyers only if offered prices above $223.67. At any lower price the owner would make more money by processing the logs.

The above data were actually collected in one of the southeastern states. In this particular study, all of the veneer logs were obtained from the Forest Service log grade Number 1 component. Sometimes Number 2 saw logs are also suitable for certain types of veneer. The manufacturing cost used is $75.09/MBF lumber tally, which is a southwide average from standard hardwood sawmills and includes handling and sorting.

The delivered log cost figures are from *Timber Mart South* (1977) and apply to one of the southeastern states. *The Hardwood Market Report* (1977) was used to derive the lumber tally values of the logs. Note that profit per thousand log scale, as shown in Table 2, stays exactly the same for log grades 1, 2, and 3, as might be expected with no allowance made for a drop in lumber value upon removal of the highest grade of log. The lumber values then are on the optimistic side in Table 2. The owner could make the appropriate adjustments in values by keeping data at his plant, but over the long haul the percentages will hold up.

In summary, the $59.95 or $60.00/thousand extra for the veneer log looks like gravy until the owner examines the total profit picture of the entire group of logs. This is where owners may often overlook their own efficiencies. Another consideration is the value of the residues. In the example cited earlier, over $160 worth of chips from the Number 1 logs would be lost if the veneer logs were sold. Owners and sawmill operators who evaluate their options on the basis of the guidelines in this article will know when it is best to sell or to saw their high grade logs.

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